CLAIMS

1. A ceramic porous body including a plurality of pores formed in a substrate made of a ceramic at a specified porosity; the substrate having predetermined end faces; and the pores connecting through the end faces of the substrate to each other and having branches,

wherein when a cross-sectional plane image of the substrate cut along a predetermined plane is binarized by image analysis to distinguish a specified pore part derived from the pores from a specified non-pore part derived from the substrate, and a center line passing a central part of the pore part is drawn on the distinguished image,

the porosity (ε (%)), a mean width (D_p (μm)) of the pore part represented by a mean value of a distance, between outlines specifying the pore part and facing each other, perpendicular to the center line, a mean length (L (μm)) of the pore part represented by a mean value of a length of the center line between adjacent branch points among a plurality of specified branch points derived from the center line and a length of the center line between an end of the center line and the branch point adjacent to the end of the center line, and a mean pore size (D_H (μm)) satisfy relations of the following equations (1) and (2):

$$200 \leq \varepsilon \times (D_p/2)^2/L \quad \ldots (1); \text{ and}$$

$$L \leq D_H/2 \quad \ldots (2).$$

2. The ceramic porous body according to claim 1,

wherein the permeability is 5×10^{-12} m^2 or more.

3. The ceramic porous body according to claim 1, wherein the permeability is 1×10^{-11} m^2 or more.

4. The ceramic porous body according to any one of claims 1 to 3, wherein the ceramic includes at least one type selected from the group consisting of alumina, mullite, cordierite, silicon nitride, and silicon carbide.

5. The ceramic porous body according to any one of claims 1 to 4, wherein a four-point bending strength is 10 MPa or more.

6. An evaluation method capable of clarifying superiority/inferiority of a permeability of a ceramic porous body as a member constituting a diesel particulate filter, and a factor for the superiority/inferiority of the permeability, the ceramic porous body including a plurality of pores formed in a substrate made of a ceramic at a specified porosity; the substrate having predetermined end faces: the pores connecting through the end faces of the substrate to each other and having branches,

wherein in a case where a cross-sectional plane image of the substrate obtained by cutting the ceramic porous body along a predetermined plane is binarized by image analysis to thereby distinguish a specified pore part

derived from the pores from a specified non-pore part derived from the substrate, and a center line passing a central part of the pore part is drawn on the distinguished image,

when the porosity (ε (%)), a mean width (D_p (μm)) of the pore part represented by a mean value of a distance, between outlines specifying the pore part and facing each other, perpendicular to the center line, a mean length (L (μm)) of the pore part represented by a mean value of a length of the center line between adjacent branch points among a plurality of specified branch points derived from the center line and a length of the center line between an end of the center line and the branch point adjacent to the end of the center line, and a mean pore size (D_H (μm)) satisfy relations of the following equations (1) and (2), it is judged that the ceramic porous body has a superior permeability and a superior pore shape as the member constituting the diesel particulate filter:

$$200 \leq \varepsilon \times (D_p/2)^2/L \quad \ldots (1); \text{ and}$$

$$L \leq D_H/2 \quad \ldots (2).$$